We claim:

1. A micro mirror comprising:
a mirror plate;
a spacer support frame;
a hinge connected to the spacer support frame and the mirror plate for allowing the mirror plate to rotate relative to the spacer support frame about an axis defined by the hinge; and
wherein each of the mirror plate, the spacer support frame, and the hinge are fabricated from a single continuous piece of material.

2. The micro mirror of claim 1, wherein the material is single crystal silicon.

3. The micro mirror of claim 1, wherein the hinge is a vertically oriented torsion spring.

4. The micro mirror of claim 1, wherein the mirror plate has a reflective top surface.

5. The micro mirror of claim 1, further comprising a reflective layer on top of the plate.

6. The micro mirror of claim 1, wherein the spacer support frame includes walls, the walls having a thickness of about 1 micron or less.

7. The micro mirror of claim 1, further comprising a mechanical stop for stopping rotation of the mirror plate relative to the spacer frame when the mirror plate has rotated to a predetermined angle.

8. An array of a plurality of micro mirrors, comprising:
a spacer support frame with walls defining a plurality of cavities, each cavity corresponding to a micro mirror;
a plurality of mirror plates;
a plurality of hinges, each hinge connected to at least one wall of the spacer support frame and connected to a mirror plate of the plurality of mirror plates for

allowing that mirror plate to rotate relative to the spacer support frame about an axis defined by the hinge; and

wherein the spacer support frame, the plurality of mirror plates, and the plurality of hinges are fabricated from a single continuous piece of material.

9. The array of claim 8, wherein the mirror plates each have an upper surface.

10. The array of claim 9, wherein the upper surfaces of the mirror plates are polished to reflect light.

11. The array of claim 9, wherein a reflective layer is deposited on each upper surface of the mirror plates for reflecting light.

12. The array of claim 8, further comprising a control substrate connected to the spacer support frame and having at least one electrode corresponding to each of the plurality of mirror plates for receiving a voltage to controllably deflect the mirror plate of the micro mirror.

13. The array of claim 12, wherein the hinge divides the mirror plate into a first part and a second part, such that when the first part of the mirror plate moves toward the control substrate as the mirror plate rotates about the axis defined by the hinge, the second part of the mirror plate moves away from the control substrate.

14. The array of claim 12, wherein the control substrate further comprises addressing and control circuitry for selectively applying voltages to the plurality of electrodes to selectively controllably deflect the mirror plates in the array.

15. The array of claim 8, wherein the surfaces of the plates in the mirror array make up at least 85% of the surface area of the array.

16. The array of claim 8, wherein the surfaces of the plates in the mirror array make up at least 90% of the surface area of the array.

17. An array of a plurality of micro-mirrors, comprising:

for each micro mirror in the array, at least one mirror plate with an upper surface;

for each micro mirror in the array, at least one hinge connected to the at least one mirror plate of that micro mirror for allowing that mirror plate to rotate;

a support frame with a plurality of support walls, each hinge connected to at least one support wall, for supporting the hinge and the mirror plate and separating each mirror plate from a second substrate connected to the support frame; and

wherein the mirror plates and the hinges are fabricated from a single continuous piece of material.

18. The array of claim 17, wherein there is a gap of 0.2 microns or less between an edge of the upper surface of the mirror plate and a support wall of the support frame.

19. The array of claim 17, wherein the upper surfaces of the mirror plates are substantially rectangular in shape.

20. The array of claim 19, wherein the upper surfaces of the mirror plates have an area of approximately 225 square microns.